

**STATE OF MINNESOTA  
BEFORE THE  
PUBLIC UTILITIES COMMISSION**

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Gregory Scott

Chair  
Commissioner  
Commissioner  
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Commissioner

**In the Matter of the Application for a  
Certificate of Need for the Trimont Area  
Wind Farm**

**Docket No. IP-6339/CN-03-1841**

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**TRIMONT'S SUPPLEMENTAL FILING: January 12, 2004**

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**1.0 Introduction**

On November 18, 2003, Trimont Area Wind Farm, LLC ("Trimont" or "Company"), filed an application for a Certificate of Need (the "Application") to construct a 100 MW wind generation facility in Martin and Jackson Counties ("Trimont Wind Project" or the "Project"). The Application included a request for variances from specific data requirements in eight certificate of need rules, on grounds that those requirements did not apply to the proposed facility, either because it was a wind facility or because it was not being built by a public utility.

On November 19, 2003, the Commission issued a notice requesting comments on the request for variances and the completeness of the Application.

On December 1, 2003, the Company filed a request that the Staff of the Environmental Quality Board ("EQB") prepare the environmental report required under the certificate of need

rules. On the same date, the EQB Staff filed comments suggesting that it prepare that report, in light of pending EQB rules assigning that responsibility to EQB Staff.

On December 1, 2003, the Department of Commerce (“Department”) filed comments on the completeness of the Application and the request for variances. The Department recommended treating Trimont’s requests for variances as requests for exemptions from filing requirements under Minn. Rules 7849.0200. The Department recommended granting most of the requested exemptions and denying certain others. The Department recommended finding the Application substantially complete as of the date that Trimont submitted a supplemental filing containing specified information. Finally, the Department recommended varying Minn. Rules 7849.0200, subp. 6, which requires a 45-day interval between filing exemption requests and filing an application, to permit Trimont’s Application to go forward without delay.

On December 11, 2003, Trimont’s filing came before the Commission.

On December 22, 2003, the Commission issued an Order acting on the requests for exemptions, accepting the Application as substantially complete as of the date of a supplemental filing, varying the Rules requiring a 45-day interval between filing a request for exemptions from filing requirements and filing an application, and asking the EQB Staff to prepare the environmental report on the Application.

This Supplemental Filing contains Trimont’s response to the requests for additional information contained in the Commission’s December 22, 2003, Order.

## **2.0 Trimont’s Responses to the Commission’s Order**

### **2.1 The effect of economies of scale (Minn. Rules 7849.0250(A)(1))**

Minn. Rules 7849.0250(A)(1) seeks a description of the proposed facility, including a discussion of the effect of the economies of scale on the facility size and timing. Trimont’s

Project will consist of approximately 67 turbines, each with a nominal nameplate rating of 1.5 MW. Larger wind projects realize economies of scale by spreading the project's fixed transaction, operations, and maintenance costs over a larger generating base than is available with smaller projects. The American Wind Energy Association illustrated such economies of scale by comparing a 3 MW and a 51 MW wind project. Assuming identical turbines and an average wind speed of 18 mph, the larger project produced energy at 3.6¢/kWh while the smaller project's cost was 5.9¢/kWh, a difference of nearly 40%.<sup>1</sup>

## **2.2 Capacity costs in dollars per kilowatt (Minn. Rules 7849.0250(C)(1))**

Capacity cost per kilowatt is a measure that is common to thermal power projects and is used only for projects that receive "capacity payments." Wind projects do not receive a capacity payment. The Trimont Wind Project will deliver energy to GRE on an as-generated basis and will receive payment only for energy generated. The basis for Trimont's winning bid to GRE was a competitive cost structure that is consistent with industry standards. GRE is an unregulated entity that looks to its board and members for final approval of contracts to purchase power to serve its load. That final pricing approval will be provided by GRE's 28 member distribution cooperatives. The specifics of that winning bid are proprietary.

## **2.3 Total costs per kilowatt hour (Minn. Rules 7849.0250(C)(6))**

Trimont estimates a typical wind farm's total cost of a kilowatt hour in current dollars to be 4¢ - 6¢/kWh. This estimate assumes typical wind farm design, construction, and operational data for a 30-year estimated service life. The Trimont Wind Project was selected through a competitive bidding process to provide GRE with a renewable energy source at a price that is below both the market prices at which GRE currently must source energy and GRE's published

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<sup>1</sup> AMERICAN WIND ENERGY ASSOCIATION, *The Economics of Wind Energy*, March 2002, at <http://www.awea.org/pubs/factsheets/EconomicsofWind-March2002.pdf>. (last visited January 6, 2004).

QF price of 3.1¢/kWh. The total price per kilowatt hour will be paid by GRE for energy delivered on an as-generated basis. GRE is an unregulated entity that looks to its board and members for final approval of contracts to purchase power to serve its load. That final pricing approval will be provided by GRE's 28 member distribution cooperatives.

#### **2.4 Rate impacts on a state-wide basis (Minn. Rules 7849.0250(C)(7))**

Minn. Rules 7849.0250(C)(7) seeks an estimate of the Project's effect on rates system-wide and in Minnesota, assuming a test year beginning with the proposed in-service date. Trimont has been exempted from providing "system wide" information because it has no system. Because Trimont has no system, it cannot provide "test year" data and analysis.

Trimont's Project is the winning proposal in GRE's competitive bidding process for renewable generation. Trimont's Project is for a 100 MW LWECS and nothing else. GRE has agreed to purchase the entire Project output. The purchase price will be lower than the \$36/MWh that GRE is currently paying on the spot market, and lower than the \$37.62/MWh that GRE projects it will need to pay in 2005 for the over 1,000 GWh of energy it anticipates purchasing. Since there is little to no excess capacity in MAPP, the Project's effect will be to make available to other utilities the spot energy that GRE will not need, due to its purchase of Project energy from Trimont.

#### **2.5 Major assumptions (Minn. Rules 7849.0250(C)(9))**

Minn. Rules 7849.0250(C)(9) asks for the major Project-specific assumptions used in providing information relating to the proposed facility and alternatives requested in Minn. Rules 7849.0250(C)(1)-(8). Trimont has used the following assumptions in generating and providing the Commission with that information: Project construction will take between six and eight months. The Project has an anticipated commercial operation date of December 2004. Project

capital costs have been estimated at \$1200/kW for a total Project capital cost of approximately \$120,000,000.00. A capacity factor of 39% and a service life of 30 years are assumed for the Project.

Trimont does not have access to the proprietary information relating to alternative renewable energy projects considered by GRE in its renewables RFP. Without specific information as to the size and type of alternative proposals considered, Trimont is able to report only a range of cost and environmental information based on published literature.

## **2.6 The alternative of no facility (Minn. Rules 7849.0340(B)(1)-(11))**

Minn. Rules 7849.0340(B)(1)-(11) address the alternative of no facility. The Commission's Order asks Trimont to address the effects on GRE of not building the Project. The detailed information outlined in Minn. Rules 7849.0340(B)(1)-(11) is known solely to GRE and is not available to Trimont. However, Trimont will attempt to respond as best it can to the Commission's order.

GRE, through its competitive bidding process for renewable generation, received sixty-two bids from twenty-five developers. Fifty-six of the bids were wind energy projects, as were all of the bids selected for short-list consideration. If its Application is denied, Trimont will not build the Project. The principal consequence of not building the Project will be to stall and encumber GRE's ability to meet the REO. Because the Project was the winning bid, GRE will be required to secure resources to meet the REO by moving to more costly, less attractive renewable energy sources.

## **2.7 Other renewable options (Minn. Rules 7849.0250(B))**

Minn. Rules 7849.0250(B) seeks a discussion of the availability of alternatives to the Project. The Commission has exempted Trimont from addressing non-renewable alternatives because they could not fulfill the Project's purpose of increasing the supply of renewable generation to GRE as directed by statute.

Trimont's winning bid in GRE's competitive bidding process for renewable generation is for a 100 MW wind facility. Trimont has proposed no alternatives to GRE nor does it intend to do so. GRE's Integrated Resource Plan ("IRP"), made a part of the Application as Appendix A, sets forth GRE's analysis of all available generation resources and its rationale for selecting wind as its preferred means for meeting the REO ("[w]ind energy is currently the most cost-effective renewable energy resource in Minnesota."<sup>2</sup>).

It is Trimont's understanding that, in addition to wind proposals, GRE also received responses for biomass and landfill gas projects. Without specific information on any other proposals evaluated, Trimont believes that, based in part on GRE's IRP, biomass and landfill gas projects were available but were not selected because of factors including pricing, location, and size. Based on other projects that have been constructed, it is unlikely that a single biomass facility on the scale of 100 MW would be economically feasible. The three biomass projects that have undergone the MEQB environmental review process range in size from 28.5 MW to 65 MW.<sup>3</sup> The average size of a landfill gas facility is 3 MW.<sup>4</sup> Conversations with representatives from GRE have caused Trimont to believe that biomass and landfill gas facilities large enough to meaningfully assist GRE in satisfying the REO were not cost-effective.

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<sup>2</sup> GREAT RIVER ENERGY RESOURCE PLAN, *Resource Options: Renewables*, Section 6.2.4 at 10 (July 1, 2003).

<sup>3</sup> The 28.5 MW St. Paul Cogeneration Facility in St. Paul, the 65 MW Fibrominn Biomass Power Plant in Benson and the 38.5 MW NGPP Minnesota Biomass project in Waseca.

<sup>4</sup> Energy Information Administration. *Renewable Energy Annual, 1996. 1997.* p. 104, at <http://www.eia.doe.gov/cneaf/solar.renewables/renewable.energy.annual/chap10.html>

## **2.8 Cost data on renewable options (Minn. Rules 7849.0250(C))**

Minn. Rules 7849.0250(C) seeks a discussion of certain issues relating to the cost of alternatives to the Project. The Commission has exempted Trimont from addressing non-renewable alternatives, since they could not fulfill the Project's purpose of increasing the supply of renewable generation to GRE as directed by statute. Information relating to the cost of other renewable energy projects considered by GRE in its RFP is proprietary to GRE and Trimont does not have access to such information. The only information relating to the cost of other renewable energy projects considered by GRE in its RFP that Trimont has access to can be found in the non-public version of GRE's IRP.

Trimont will, however, provide the Commission with general cost information for renewable energy alternatives to the best of its ability. Without knowing the specific details of the biomass and landfill gas projects considered by GRE, industry literature estimates the cost of energy from biomass to range from 5.8 to 11.6 ¢/kWh<sup>5</sup> in 1996 dollars and the electricity prices for landfill gas to range from 3.2 to 6.5 ¢/kWh<sup>6</sup> in 1998 dollars. Assuming the availability of the Production Tax Credit for wind energy, Trimont's proposal is a far more cost-effective means of assisting GRE in meeting the REO.

## **2.9 Consequences of delay (Minn. Rules 7849.0300)**

Minn. Rules 7849.0300 asks for the consequences of delay on its system, neighboring systems, and the power pool should the Project be delayed one, two, or three years, or postponed indefinitely. The rules ask for this information for three different demand levels as found in Minn. Rules 7849.0270. Because the Trimont Project will generate wholesale electricity and sell to GRE at the bus bar under a long-term Power Purchase Agreement ("PPA"), because Trimont

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<sup>5</sup> AWEA. *Comparative Cost of Wind and Other Energy Sources*. 2001, at <http://www.awea.org/pubs/factsheets/Cost2001.PDF>.

<sup>6</sup> Energy Information Administration. *Analysis of the Climate Change Technology Initiative: Fiscal Year 2001*. Table 18, *Landfill Gas to Energy Supply and Cost of Electricity Production by Region*, at <http://www.eia.doe.gov/oiaf/climate/tbl18.html>

does not own or operate transmission or serve load to its own system, and because Trimont provided the Commission with GRE's IRP, the Commission granted Trimont an exemption from the information requirements of Minn. Rules 7849.0270.

The Commission has asked Trimont, however, to provide it with information on the consequences of delay on GRE's system and the power pool in general. The primary consequence of delaying the Project would be Trimont's inability to fulfill its obligations to GRE to develop the 100 MW renewable energy facility. That would have two primary effects on GRE's system. First, it would significantly hinder GRE's ability to meet the REO. Second, it would reduce the total energy available to GRE and force GRE to purchase higher-priced energy on the spot market.

With respect to the consequences of delay on the power pool in general, Table 4 of the Application illustrates that the MAPP Reserve Margin Percentage goes deficit in the summer season of 2005. The Project will serve to reduce that deficit with clean, renewable wind energy. Because the Project has a projected commercial operation date of December 2004, delaying the Project for even one year would have a negative impact on Trimont's ability to contribute to reducing the regional power supply's reserve margin deficit. Table 4 shows that the deficit increases each year through 2011, so additional delays of two or three years, or an indefinite postponement of the Project, would have additional negative impacts on the regional power supply.



## **2.10 Information on renewables (Minn. Rules 7849.0320)**

### **2.10.1 Land Requirements**

Biomass: The land requirements for electric power plants fueled by biomass depend on the characteristics of the individual facility, such as the size of the fuel storage and processing area, the amount of process water required, the type of combustors and associated equipment, and storage for solid waste. The developed acreage of recent proposals for biomass facilities in Minnesota (28.5 MW – 65 MW) have ranged in size from approximately 1.4 to approximately 90 acres.<sup>7</sup>

Landfill Gas: A landfill gas electric generation plant would be constructed at an existing landfill, and likely would not require any additional land to be taken out of agricultural or other use.

Wind Power: The land requirements for a wind farm depend on the size of the project. Typical wind farms will take approximately one-half acre per turbine out of production, including access roads.

### **2.10.2 Traffic**

Biomass: The amount of traffic generated by the construction of a biomass facility is expected to be larger than that generated by construction of a wind farm. The operations traffic generated by a biomass facility depends largely on the type and location of the biomass fuel, but is expected to be more than that generated by a wind farm because there are more employees and because the need for fuel delivery is continual.

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<sup>7</sup> The St. Paul Cogeneration facility added approximately 1.4 acres to an existing district heating and cooling plant; this figure does not include fuel storage, which is provided by a contractor. The Fibrominn Biomass Power Plant plans to develop approximately 36 acres. The NGPP Minnesota Biomass Plant considered two sites, one 79 and one 91 acres; site selection had not been finalized at the time of this filing.

Landfill Gas: There would be some traffic generated by construction of a landfill gas facility, but typically not as much as would be generated during construction of a biomass power plant. There would be no increase in traffic from that generated by the landfill itself once the power plant became operational.

Wind Power: Traffic generated during construction and operation would be expected to be the same as for the Project. A detailed analysis of the Project's anticipated vehicular traffic impacts is presented in the Application.

### **2.10.3 Fuel Requirements**

Biomass: Fuel requirements, including fuel source, amount, heat input, heat value, sulfur, ash, and moisture content will vary by facility.

Landfill Gas: It is expected that the landfill gas would come from an existing landfill. The fuel requirements would depend on the plant's rated capacity and capacity factor. Heat value for landfill gas would be expected to be in the range of 400-500 BTU/cf. Heat inputs and the moisture content of the fuel would depend upon the individual landfill characteristics. There would be a small amount of sulfur; the actual amount would vary by landfill. Landfill gas has no ash content.

Wind Power: This question is not applicable to wind projects.

### **2.10.4 Emissions characteristics**

Biomass: The emissions from biomass facilities depend on the size of the facility, the type of combustion technology and emissions controls, and the type of fuel. A resource manual for clean energy projects summarized the emissions characteristics of biomass projects: "Biomass has a much broader effect on the environment than other renewable sources. For example, while there are no emissions from wind turbines, the combustion of biomass produces

pollutants that can have effects on human health and the environment.”<sup>8</sup> “The emissions can include nitrogen oxides (NO<sub>x</sub>), low levels of sulfur dioxide (SO<sub>2</sub>), particulate matter or ‘soot’ (PM), carbon dioxide (CO<sub>2</sub>), Volatile Organic Compounds (VOCs), and other pollutants. Emissions vary widely depending on the type of generator and emission controls used.”<sup>9</sup>

Landfill Gas: Actual sulfur dioxide, nitrogen oxide and particulate emissions from a landfill gas plant would vary depending on individual facility characteristics. Sulfur dioxide emissions would be very small, though somewhat larger than for natural gas power plants.

Wind Power: This question is not applicable to wind power projects.

#### **2.10.5 Water Use for Alternate Cooling Systems**

Biomass: Water usage of a biomass facility would depend on the size and the type facility.

Landfill Gas: A landfill gas plant would not require water cooling.

Wind Power: A wind farm would not require water cooling.

#### **2.10.6 Water Discharges**

Biomass: Water discharges from a biomass plant would vary by size and type of plant.

Landfill Gas: A landfill gas plant may generate some water discharge as moisture is released prior to combustion of the collected gas.

Wind Power: The only water discharge from operation of a wind farm would be from any sanitary water used by operation and maintenance crews.

#### **2.10.7 Radioactive Releases**

Biomass: No radioactive releases would be expected from a biomass facility.

Landfill Gas: No radioactive releases would be expected from a landfill gas facility.

Wind Power: No radioactive releases would be expected from a wind farm.

### **2.10.8 Solid Wastes**

Biomass: The types and quantities of solid wastes generated by a biomass facility would depend on the size and type of facility. Solid waste would most likely include normal construction debris such as scrap wood, plastics, wallboard, packing material, scrap metal, and electric wires.

Landfill Gas: It is expected that solid wastes from landfill gas facilities would be minimal and consist mainly of used lubricants.

Wind Power: Solid wastes generated by a wind farm would be minimal and consist mainly of gearbox oil, hydraulic fluid, and gear grease.

### **2.10.9 Noise Attributable to Operation of the Facility**

Biomass: Expected noise sources at a biomass facility would be the combustion equipment, fuel delivery and handling system, and any transmission equipment at the facility.

Landfill Gas: Noise sources at a landfill gas facility would be the generator and any transmission equipment and would be minimal compared to the noise at an operating landfill.

Wind Power: As with the Project, noise from a wind farm would come from turbine operation and from transmission equipment. A detailed description of Project noise impacts is presented in the Application.

### **2.10.10 Work Force Requirements**

Biomass: The number of construction and operating jobs would depend on the size and type of the facility.

Landfill Gas: The number of construction jobs would be less than that of a biomass facility. It is not expected that a landfill gas facility would add any jobs to those required by landfill operation.

Wind Power: The number of construction and operation jobs created by a wind farm is expected to be comparable to the Project. A detailed description of Project work force is presented in the Application.

#### **2.10.11 Transmission Facilities**

Biomass: The need for transmission facilities would depend on the size and location of the biomass plant. Trimont does not have access to the specific proposals submitted to GRE in its competitive bidding process.

Landfill Gas: The need for transmission facilities would depend on the size and location of the landfill gas facility. Trimont does not have access to the specific proposals submitted to GRE.

Wind Power: Transmission facilities would depend upon the size and location of the wind farm. Trimont does not have access to the specific proposals submitted to GRE.

#### **2.11 Information on HVTLs (Minn. Rules 7849.0330)**

Minn. Rules 7849.0330 asks that transmission line information be provided for any alternatives that would involve the construction of a new LHVTL. The Trimont Project was selected as the winning bid in GRE's RFP in part because of the Project's proximity to existing transmission lines. Trimont's Project will fully utilize GRE's existing transmission infrastructure. No new LHVTL will be associated with the facility. The Project is therefore consistent with Minnesota's policy of non-proliferation of transmission corridors.

As an Independent Power Producer ("IPP") that responded to GRE's RFP, Trimont does not have access to the other proposals considered by GRE for which construction of LHVTLs might have been necessary

### **3.0 Minn. Rules 7849.0400**

Trimont submits the following information in satisfaction of the requirements of Minn. Rules 7849.0400, subp.2(H), concerning a change in the ownership of the facility. Trimont successfully completed early stage development of its Project and was selected by GRE to supply energy from its proposed 100 MW wind facility located in Martin and Jackson Counties. The Project represents a unique opportunity for expanded local participation in a utility-scale renewable energy project in Minnesota. To maintain local participation in project revenues, Trimont has entered into a Development and Purchase Option Agreement (the “Agreement”) with Trimont Wind I, LLC (“Trimont Wind I”), an Oregon limited liability company and a wholly-owned subsidiary of PPM Energy, Inc., an Oregon corporation (“PPM”). PPM develops environmentally responsible electric generation projects in the western and mid-western United States and owns and operates or markets over 830 MW of renewable energy generation capacity. PPM owns the 51 MW Moraine Wind LWECS located in Murray County, Minnesota, and gas storage and gas-fired electric generation facilities in the western United States.

Under the terms of the Agreement, Trimont Wind I has assumed primary responsibility for permitting, constructing, operating, and maintaining the Project. As such, Trimont Wind I is now the applicant in the instant docket. Trimont and its local landowner-farmer membership retain substantial participation rights in the gross revenue generated by the Project. This unique arrangement provides Trimont with the benefits of substantial financial strength while maintaining the Project’s relationship with area landowners and the local economy. Furthermore, the Agreement provides added security to GRE and its members by introducing a creditworthy counterparty to the long-term PPA and an entity with extensive experience constructing, owning, and operating wind projects in the United States. Moreover, the Agreement

between Trimont and Trimont Wind I allows for the utilization of the tax benefits and wind generation incentives that are integral to Trimont's competitive response to GRE's RFP. Without that Agreement, the maximum benefit would not and could not be realized relative to the referenced tax benefits and incentives.

The introduction of Trimont Wind I does not materially alter any substantive aspect of the Application. All parties acknowledge their responsibility, pursuant to Minnesota Rules 7849.0220, to provide the Commission with the requisite information concerning the facility and its ownership. Trimont Wind I, like Trimont, is an IPP. Trimont Wind I does not have a "system," as defined in the Minnesota Rules Chapter 7849, has not engaged in promotional activities that have artificially increased the perceived need for the Project, nor does it maintain any energy conservation programs. Any exemption from the certificate of need informational requirements granted to Trimont on the basis of it not being a utility possessing its own "system" is equally applicable to Trimont Wind I.

#### **4.0 Summary**

Trimont and Trimont Wind I have used best efforts to respond to the Commission's additional requests for information. Trimont reiterates that, as an IPP selected by GRE through its competitive bidding process to sell the Project's entire output to GRE, Trimont does not have access to some of the information required by Minnesota Rules Chapter 7849. Thus, many of the information requirements remain inapplicable to the Project. Trimont further believes that the addition of Trimont Wind I in the development and ownership of the Project will not significantly affect any substantive portion of the certificate of need information requirements. Trimont respectfully submits this Supplemental Filing and asks that the Commission find Trimont's Application to be complete.

Dated: January 12, 2004.

Respectfully submitted,

**FREDRIKSON & BYRON, P.A.**

By \_\_\_\_\_

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